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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,672	11/30/2001	Ciuter Chang	K35A0853	8677

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EXAMINER

MILLER, BRIAN E

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/010,672

Applicant(s)

CHANG ET AL.

Examiner

Brian E. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_.

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Claims 1-39 are pending.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6, 19, 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the above claims, the phrase “substantially co-planar” is misdescriptive. The term “co-planar” means in the same plane, therefore, the use of the term “substantially” renders the phrase indefinite, because it is either in the same plane or not, it can’t be both.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-11, 13-24, 26-37, 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Otsuka (US 6,529,346). Otsuka sets forth a slider “S” (mainly elements 10& 11) for a disk drive (see FIG. 10) as shown in the FIGs. 1-2, including: a transducer 11 provided on the rear center

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pad 13 (20); the slider having a leading 10a and trailing end 10b; an air bearing surface that is configured to include a shallow recessed surface(s) 12 (10d surrounding the surfaces 12) and a deep recessed surface 15 which forms a negative pressure cavity as known in the art; a leading air bearing region (adjacent 10a); a plurality of insular regions 17 configured to reduce stiction with a disk (re claims 9, 22, 35); wherein the shallow recessed surface being disposed between the air bearing surface and the deep recessed surface; wherein the insular region is bounded by either the shallow recessed surface and/or the deep recessed surface (re claims 4-5, 17-18, 30 & 31); wherein the height differential between the one insular region and the leading air bearing region is less than 4 micro inches, i.e., 30 nm (see col. 9, last line) thus considered "substantially coplanar", in so far as this phrase has been defined and understood (re claims 6-7, 19-20, 32-33); wherein both the air bearing surface and insular region are curved thus forming a radius of curvature (see FIG. 2) (re claims 8, 21, 34); a center rear pad 13 is disposed near the trailing end of the slider (re claims 10, 23, 36); the insular regions are shaped at least as a circle (see FIG. 1) (re claims 11, 24, 37) and are formed with a DLC layer (re claims 13, 26, 39).

3. Claims 27-31, 35-39 rejected under 35 U.S.C. 102(b) as being anticipated by applicant's admitted prior art (AAPA), FIGs. 1A, 1B. The AAPA sets forth a slider for a disk drive as shown in the FIGs, including: a transducer (not shown-provided on rear center pad 108); an air bearing surface 102 that is configured to include a shallow recessed surface 114, 102 (recessed from 106) and a deep recessed surface 110; a leading air bearing region 102 (adjacent 114); at least one insular region 106 configured to reduce stiction with a disk wherein the shallow recessed surface being disposed between the air bearing surface and the deep recessed surface;

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wherein the insular region is bounded by both the shallow recessed surface and the deep recessed surface (the deep recessed surface bounds the shallow recessed surface as well) (re claims 30 & 31); a center rear pad 115 is disposed near the trailing end of the slider (re claim 36); the insular regions are shaped at least as an ellipse (re claim 37) and have surface areas between 100-2000 microns squared (re claim 38) and are formed with a DLC layer (re claim 39).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5, 9-18, 22-26, 12, 25, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA. For a description of the AAPA, see the previous rejection. While the AAPA only discusses particulars to the slider, the claimed disk drive including a "disk", a "headstack" having a "body portion", "bore", "pivot axis", an "actuator arm", "head gimbal assembly", etc. while it may have been inherent anyway, Official Notice is taken that the above recited components are notoriously old and well known elements of a magnetic disk drive, i.e., necessary for the proper operation thereof, and thus would have been obvious to have provided

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the slider of the AAPA into such a device. The motivation would have been: providing the aforementioned slider (having protrusions) into such an apparatus would have prevented the slider from sticking to the disk surface upon landing and/or takeoff, as would have been realized by a skilled artisan.

7. Claims 12, 25, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otsuka. For a description, see the rejection, supra. Although Otsuka does not expressly disclose the surface area of the insular regions being between 100-2000 microns squared, it may encompass this wide range inherently. Irrespective of that however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided such a range, as it would have been apparent to a skilled artisan that the more insular regions would reduce stiction, but too many would affect flying characteristics of the slider. The motivation would have been: lacking any criticality or any unobvious or unexpected results, the given range of surface area would have been readily encompassed by routine engineering optimization and experimentation.

### ***Conclusion***

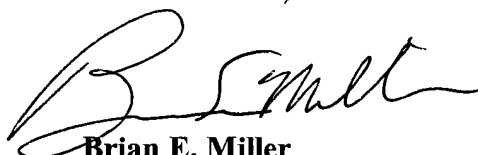
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure including US Patents to Han et al (6,236,543), Fayeulle et al (6,538,849) and Koishi et al (6,349,018) are cited to show multi-stepped ABS regions with anti-stiction pads.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian E. Miller whose telephone number is (703) 308-2850. The examiner can normally be reached on M-F 7:45am-5:15pm (FF off).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

A handwritten signature in black ink, appearing to read "B. E. Miller", is written over the printed name.

**Brian E. Miller**  
**Primary Examiner**  
**Art Unit 2652**

bem  
April 7, 2003